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cont.

of from about 1.2 to about 1.7 weight percent, based on total weight of the toner particles.

REMARKS

Status of the Claims

Upon entry of the above amendments, claims 36-47 will be pending; claims 1-18 will have been cancelled; and claims 19-35 have been withdrawn from further consideration by the Examiner (subject to Applicants' request later herein for reconsideration and reinstatement).

Response to the Office Action - Election/Restrictions

The Examiner has required restriction to one of the following inventions under 35 U.S.C. § 121:

- I. Claims 1-18, drawn to a toner, classified in Class 430, subclass 108.6.
- II. Claims 19-35, drawn to a development method, classified in Class 430, subclass 122.

The Examiner states that the inventions are distinct, each from the other, in that the product as claimed can be used in another and materially different process as further described in the Office action. A provisional election with traverse was made by Applicant's representative John Wood by telephone on April 8, 2002, to the invention of Group I, claims 1-18.

Applicants hereby affirm the election, with traverse, and acknowledge that claims 19-35 have been withdrawn from further consideration by the Examiner as directed to a non-elected invention. Applicants further believe that newly presented claims 36-47 are drawn to the subject matter of Group I, and are properly included therein.

Applicants nonetheless further request the Examiner to reconsider and withdraw the restriction requirement. Under MPEP 803, "If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." The present application

does not contain a large number of claims; only two Groups have been identified, which now cumulatively contain only three independent claims; and each Group is indicated as requiring search of a single class/subclass. Under these circumstances, Applicants respectfully submit that search and examination of the entire application can be made without serious burden.

Specification

The Examiner has asked Applicants to complete the corresponding application data on page 1 of the specification. This has been done by way of the preceding amendment to the first paragraph on page 1 of the present application. The Examiner has additionally asked Applicants to replace application numbers with patent numbers, when possible, for each application referenced in the application. As of the date of submission of this response, it is the understanding of the undersigned that no referenced application has issued as a patent. Should this change during the pendency of this application, a corresponding amendment will be presented.

Claim Rejections - 35 U.S.C. § 112

The Examiner has rejected claims 13-18 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim that which Applicants regard as the invention. In particular, the Examiner states that the rejected claims are indefinite because it is unclear what electrographic process is being used to measure the Q/m values in the claims.

Applicants respectfully disagree with the rejection regarding selection of the test used to measure Q/m. It is noted that original claims 13-15, and newly presented claims 36-41, do not incorporate absolute Q/m values. Rather, these claims recite that the Q/m value is to exhibit a certain relative behavior over time, either maintaining a value of at least 50% of the initial value (claims 35 and 39-41); maintaining a value of at least 90% of the initial value (claim 37); or

maintaining a value greater than the initial value (claim 38). One of ordinary skill in the art may be expected to use the same test to measure the Q/m value over time, and would be able to observe which behavior took place under any consistent testing protocol.

Applicants similarly respectfully request reconsideration and withdrawal of the rejection relating to the process used to define the dust level and amount of silica. It is submitted that those of ordinary skill in the art would readily understand, and be capable of measuring, the rate of toner dust formed during an electrostatic imaging process. Moreover, without being limited thereby, Applicants observe the page 19 of the specification, lines 1-4, describes a protocol for measuring dust. Given the ability to measure Q/m and dust level with reasonable specificity, it follows that the amount of silica particles required to maintain the Q/m values and toner dust levels recited in the newly presented claims may also be determined with reasonable specificity.

The Examiner has further indicated that these claims are viewed as if in product-by-process form, but are ambiguous because the phraseology appears to include the situation where the developer and its use are claimed in the same claims, where the claims must be limited to a single statutory category of invention. Applicants respectfully submit that this rejection has been obviated by the cancellation of claims 13-18, and that newly presented claims 36-47 are not subject to such rejection.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 6-9, 11, and 13-18 have been rejected under 35 U.S.C. § 102(b) as anticipated by Gady *et al.*, U.S. Patent 5,948,585, considered with *Handbook of Imaging Materials*.

Applicants submit that Gady, considered with *Handbook of Imaging Materials*, fails to teach the composition of newly presented claim 36-47, in that the references do not teach or suggest an electrostatic dry developer composition comprising silica particles in amounts sufficient to

achieve the Q/m or dust level effects recited in the respective claims.

As general background to the Examiner's prior art rejections, an important part of the context of the present invention is the recognition of two problems associated with use of a hard carrier in combination with a rotating core; dusting, and degradation of the charge/mass ratio. These are the problems recognized, and resolved, by the present invention.

Gady is not directed to reduction of dusting. Rather, Gady is directed to the problem of accomplishing image transfer with high efficiency and image quality when using toner particles having a mean volume weighted diameter D between $5\text{ }\mu\text{m}$ and $10\text{ }\mu\text{m}$. Gady observed that adhesive forces between toner and the primary image forming member can act against the electrostatically applied transfer force in forming an electrostatographic image. As toner diameter decreases, these adhesive forces can start to dominate, impairing image transfer. The addition of sub-micrometer particulate addenda, such as silica particles, can lower the threshold value of the toner volume weighted toner diameter at which the adhesion forces dominate the transfer force. However, as adhesion is effectively decreased by addition of particulate addenda, cohesion is also reduced, aggravating image disruption. Gady offers a solution to this dilemma, in the context of compliant intermediate transfers, which involves the use of dry toner particles having a mean volume weighted diameter D of between $5\text{ }\mu\text{m}$ and $10\text{ }\mu\text{m}$, containing particulate addenda in a concentration range of between $(3.2/D)\%$ and $(5.6/D)\%$. Gady is not directed to the problem of dusting, and does not disclose the relationship between silica and dusting which is addressed by the present invention. In fact, Gady may be seen to teach away from the present invention, by demonstrating that silica levels which exceed about 0.7% are generally undesirable (see, for example, column 13, lines 4-16). This is a corollary of Gady's focus on improving image quality and its relation to dot structure, in contrast to the present invention's solution to

the problems of Q/m ratio and dust levels.

Claims 1 and 6-18 have been rejected under 35 U.S.C. § 102(b) as anticipated by Desir *et al.*, U.S. Patent 5,633,110, also considered with *Handbook of Imaging Materials*.

While Desi makes a general reference to the availability of hard carriers, it appears that all of the examples therein are directed to soft carriers. The relevant paragraph, which appears, for example, at column 14, lines 1-5 and again at lines 30-34; and in column 15, lines 35-39, refers simply to "coated ferrite carrier particles". However, each such paragraph also refers the reader to the printing example, which expressly uses a stationary magnetic core (see column 16, lines 6-8); and Desi further expressly associates use of a stationary magnetic core with preferred use of soft magnetic particles (see column 10, lines 6-9). The apparent exemplification only of soft carriers, and in any event only of stationary cores, is consistent with the lack of any recognition of the dusting problems observed in the present application under conditions which include hard carriers and a rotating core.

Claims 1-11 and 13-18 have been rejected under 35 U.S.C. § 102(a) and (e) as anticipated by Srinivasan *et al.*, U.S. Patent 6,210,851, considered with *Handbook of Imaging Materials*.

Applicants respectfully request reconsideration and withdrawal of this rejection in light of the newly presented claims, particularly in that Srinivasan does not disclose the use of silica levels in excess of 1% by weight.

Claim Rejections - 35 U.S.C. §§ 102 and 103

Claims 13-18 have been rejected under 35 U.S.C. §§ 102(a) and (e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over, Srinivasan *et al.*, U.S. Patent 6,210,851, or Gady *et al.*, U.S. Patent 5,948,585, each considered with *Handbook of Imaging Materials*. Applicants respectfully refer the Examiner to the preceding comments regarding

Srinivasan and Gady in requesting reconsideration and withdrawal of this rejection.

Claim 12 has been rejected under 35 U.S.C. § 103(a) as unpatentable over Srinivasan *et al.*, U.S. Patent 6,210,851, or Gady *et al.*, U.S. Patent 5,948,585, each considered with *Handbook of Imaging Materials*, all in view of Miskinis *et al.*, U.S. Patent 4,764,445. Applicants again respectfully refer the Examiner to the preceding comments regarding Srinivasan and Gady in requesting reconsideration and withdrawal of this rejection, noting that Miskinis fails to cure the deficiencies of the primary references.

Oath/Declaration

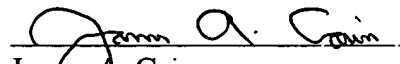
Applicants acknowledge the Examiner's requirement for submission of a new oath or declaration in compliance with 37 C.F.R. 1.67(a). The Examiner has identified the current Declaration as defective because it contains non-initialed alterations to the citizenship of inventor Srinivasan and to the telephone correspondence name.

The undersigned wishes to apologize to the Examiner for being unable to provide a re-executed Declaration contemporaneously with the present response. The attorney previously responsible for this application resigned very recently; and, upon reviewing the file and becoming aware of the need for a new Declaration, the undersigned also discovered that one of the inventors, Robert D. Fields, would not be available until after the response deadline. A new Declaration will be executed as soon as possible, which the undersigned expects to mean within the next two weeks. If it would facilitate processing to have the new Declaration hand-carried to the Group, rather than submitted by mail, the Examiner is invited to so advise the undersigned, who would be happy to comply.

Conclusion

Applicants have sincerely attempted to be fully responsive to the matters raised in the Office action. Reconsideration and withdrawal of the objections and rejections is requested, accompanied by issuance of a notice of allowability. Should the Examiner have questions or comments which might be amenable to a telephonic interview, the undersigned is of course available.

Respectfully submitted,
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Version with Markings to Show Changes Made

In the Specification

(Amended) This Application claims benefit under 35 USC §119 (e) of prior co-pending U.S. Provisional Patent Application, Serial No. 60/204,942, filed May 17, 2000, the disclosure of which is incorporated herein by reference in its entirety. Attention is also directed to the following related U.S. patent application: U.S. Serial No. [_____] (Attorney Docket No. 10044)] 09/853,412, entitled "Electrographic Methods Using Hard Magnetic Carrier Particles", filed May 11, 2001, the disclosure of which is incorporated herein by reference in its entirety.